Permit Writer	Edward Andrews
Email Address	Edward.s.andrews@wv.gov
Company Name	Bayer CropScience LP
Company ID	039-00007
Permit Number	R13-3111D
Facility Name	Institute Site
County	Kanawha County
Newspaper	The Charleston Gazette
Company Contact & Email	Linda Tennant linda.tennant@bayer.com
Consultant Email Address	N/A
Regional Office	N/A

Copy Todd Shrewsbury at Todd.H.Shrewsbury@wv.gov

emails prepped

publish Fri Jan 13 2017

30 days Mon Feb 13 2017

Permit Writer	Edward Andrews
Email Address	Edward.s.andrews@wv.gov
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Regional Office	N/A

Copy Todd Shrewsbury at Todd.H.Shrewsbury@wv.gov

INTERNAL PERMITTING DOCUMENT TRACKING MANIFEST

Company Name Brewer

Permitting Action Number R13-3111D Total Days 15 DAQ Days 14

Permitting Action:

- ○ Permit Determination
- ○ General Permit
- ○ Administrative Update
- ○ Temporary
- ○ Relocation
- ○ Construction
- ☒ Modification
- ○ PSD (Rule 14)
- ○ NNSR (Rule 19)

Documents Attached:

- ☒ Engineering Evaluation/Memo
- ☒ Draft Permit
- ☒ Notice
- ○ Denial
- ○ Final Permit/General Permit Registration
- ☒ Completed Database Sheet
- ○ Withdrawal
- ○ Letter
- ○ Other *(specify)* _____

Date	From	To	Action Requested
12/27	Ed	Bev	Please review for going to public comment.
1/10/17	Bev	Ed	See Comments - Addition - CAO to Notice

NOTE: Retain a copy of this manifest for your records when transmitting your document(s).

Permit / Application Information Sheet
Division of Environmental Protection
West Virginia Office of Air Quality

Company:	Bayer CropScience LP			**Facility:**	Institute
Region:	4	**Plant ID:**	039-00007	**Application #:**	13-3111D
Engineer:	Andrews, Edward S.			**Category:**	Chemical
Physical Address:	Rte 25 & I 64 Institute WV 25112			SIC: [2869] CHEMICALS AND ALLIED PRODUCTS - INDUSTRIAL ORGANIC CHEMICALS,NEC **NAICS:** [325199] All Other Basic Organic Chemical Manufacturing SIC: [2869] CHEMICALS AND ALLIED PRODUCTS - INDUSTRIAL ORGANIC CHEMICALS,NEC **NAICS:** [325110] Petrochemical Manufacturing SIC: [2879] CHEMICALS AND ALLIED PRODUCTS - AGRICULTURAL CHEMICALS, NEC **NAICS:** [325320] Pesticide and Other Agricultural Chemical Manufacturing	
County:	Kanawha				
Other Parties:	ENV_CONT - Tennant, Linda 304-767-6161 PLT_MGR - Stewart, Connie 304-767-6595				

Information Needed for Database and AIRS
1. Need valid physical West Virginia address with zip
2. Pending result code (99) more than two months old

Regulated Pollutants

CO	Carbon Monoxide	191.550 TPY
PM10	Particulate Matter < 10 um	23.490 TPY
VOC	Volatile Organic Compounds (Reactive organic gases)	29.490 TPY
PM2.5	Particulate Matter < 2.5 um	23.410 TPY
THAP	Total HAP Pollutants	2.400 TPY
NOX	Nitrogen Oxides (including NO, NO2, NO3, N2O3, N2O4, and N2O5)	200.750 TPY
CO2E	Carbon Dioxide Equivalents	652544.000 TPY

Summary from this Permit 13-3111D

Air Programs	Applicable Regulations
MACT	02 10 60 D b 63 A
NSPS	
TITLE V	
Title V/Major	

Fee Program	Fee	Application Type
3A	$2,000.00	MODIFICATION

Notes from Database
Permit Note: This application is for another Db boiler which is subject to the 5 year tune-up requirement from the Boiler MACT.

Activity Dates

APPLICANT PUBLISHED LEGAL AD	12/01/2016
APPLICATION RECIEVED	12/12/2016
APPLICATION FEE PAID	12/13/2016
ASSIGNED DATE	12/13/2016
APPLICATION DEEMED COMPLETE	12/13/2016

NON-CONFIDENTIAL

Please note, this information sheet is not a substitute for file research and is limited to data entered into the AIRTRAX database.

Company ID: 039-00007
Company: Bayer CropScience LP
Printed: 12/27/2016
Engineer: Andrews, Edward S.

AIR QUALITY PERMIT NOTICE

Notice of Intent to Approve

On December 12, 2016, Bayer CropScience LP applied to the WV Department of Environmental Protection, Division of Air Quality (DAQ) for a modification permit to install an additional boiler to support the facility's chemical manufacturing units located next to State Route 25 in Institute, WV at latitude 38.384537 degrees and longitude -81.776484 degrees. A preliminary evaluation has determined that all State and Federal air quality requirements will be met by the proposed facility. The DAQ is providing notice to the public of its preliminary determination to issue the permit as Permit R13-3111D.

The following changes in potential emissions will be authorized by this permit action: Particulate Matter, 0.24 tons per year (TPT); Particulate Matter less than ten microns, 0.24 TPY; Particulate Matter less than 2.5 microns, 0.20 TPY; Oxides of Nitrogen, 16.87 (TPY); Carbon Monoxide, 17.13 TPY; Volatile Organic Compounds, 2.50 TPY; Total Hazardous Air Pollutants, 0.88 TPY; and Carbon Dioxide Equivalent, 54,366.27 TPY.

Written comments or requests for a public meeting must be received by the DAQ TBD by Sandra. A public meeting may be held if the Director of the DAQ determines that significant public interest has been expressed, in writing, or when the Director deems it appropriate.

The purpose of the DAQ's permitting process is to make a preliminary determination if the proposed modification will meet all state and federal air quality requirements. The purpose of the public review process is to accept public comments on air quality issues relevant to this determination. Only written comments received at the address noted below within the specified time frame, or comments presented orally at a scheduled public meeting, will be considered prior to final action on the permit. All such comments will become part of the public record.

Edward Andrews
WV Department of Environmental Protection
Division of Air Quality
601 57th Street, SE
Charleston, WV 25304
Telephone: 304/926-0499, ext. 1214
FAX: 304/926-0478

Additional information, including copies of the draft permit, application and all other supporting materials relevant to the permit decision may be obtained by contacting the engineer listed above. The draft permit and engineering evaluation can be downloaded at:

www.dep.wv.gov/daq/Pages/NSRPermitsforReview.aspx

Permit / Application Information Sheet
Division of Environmental Protection
West Virginia Office of Air Quality

Company:	Bayer CropScience LP			**Facility:**	Institute
Region:	4	**Plant ID:**	039-00007	**Application #:**	13-3111D
Engineer:	Andrews, Edward S.			**Category:**	Chemical
Physical Address:	Rte 25 & I 64 Institute WV 25112			**SIC:** [2869] CHEMICALS AND ALLIED PRODUCTS - INDUSTRIAL ORGANIC CHEMICALS,NEC **NAICS:** [325199] All Other Basic Organic Chemical Manufacturing **SIC:** [2869] CHEMICALS AND ALLIED PRODUCTS - INDUSTRIAL ORGANIC CHEMICALS,NEC **NAICS:** [325110] Petrochemical Manufacturing	
County:	Kanawha			**SIC:** [2879] CHEMICALS AND ALLIED PRODUCTS - AGRICULTURAL CHEMICALS, NEC **NAICS:** [325320] Pesticide and Other Agricultural Chemical Manufacturing	
Other Parties:	ENV_CONT - Tennant, Linda 304-767-6161 PLT_MGR - Stewart, Connie 304-767-6595				

Information Needed for Database and AIRS
1. Need valid physical West Virginia address with zip
2. Pending result code (99) more than two months old

Regulated Pollutants

Summary from this Permit 13-3111D

Air Programs		Applicable Regulations
Fee Program	**Fee**	**Application Type**
	$2,000.00	MODIFICATION

Notes from Database

Activity Dates

APPLICATION RECIEVED	12/12/2016
APPLICATION FEE PAID	12/13/2016
ASSIGNED DATE	12/13/2016

NON-CONFIDENTIAL

Please note, this information sheet is not a substitute for file research and is limited to data entered into the AIRTRAX database.

Company ID: 039-00007
Company: Bayer CropScience LP
Printed: 12/13/2016
Engineer: Andrews, Edward S.

West Virginia Department of Environmental Protection

Earl Ray Tomblin
Governor

Division of Air Quality

Randy C. Huffman
Cabinet Secretary

Permit to Modify

R13-3111C

This permit is issued in accordance with the West Virginia Air Pollution Control Act (West Virginia Code §§22-5-1 et seq.) and 45 C.S.R. 13 – Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits and Procedures for Evaluation. The permittee identified at the above-referenced facility is authorized to construct the stationary sources of air pollutants identified herein in accordance with all terms and conditions of this permit.

Issued to:

Bayer CropScience LP
Institute Site
039-00007

William F. Durham
Director

Issued: DRAFT

This permit will supercede and replace Permit R13-3111C.

Facility Location:	On State Route 25 Institute, Kanawha County, West Virginia
Mailing Address:	P.O. Box 1005 Institute, WV 25112
Facility Description:	Chemical Manufacturing Complex
NAICS Codes:	325320
UTM Coordinates:	432.0 km Easting • 4,248.3 km Northing • Zone 17
Permit Type:	Modification
Description of Change:	This action is for the installation of Boiler 20, which is a 106 MMBtu/hr, natural gas fired boiler.

Any person whose interest may be affected, including, but not necessarily limited to, the applicant and any person who participated in the public comment process, by a permit issued, modified or denied by the Secretary may appeal such action of the Secretary to the Air Quality Board pursuant to article one [§§22B-1-1 et seq.], Chapter 22B of the Code of West Virginia. West Virginia Code §§22-5-14.

The source is subject to 45CSR30. Changes authorized by this permit must also be incorporated into the facility's Title V operating permit. Commencement of the operations authorized by this permit shall be determined by the appropriate timing limitations associated with Title V permit revisions per 45CSR30.

Table of Contents

1.0. Emission Units

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity (MMBtu/hr)	Control Device
B016	E016	Boiler 16[1]; Industrial Boiler Natural Gas Fired Boiler with low-NO_x Burner	2015	350 MMBtu/hr	None
B017	E017	Boiler 17[1]; Industrial Boiler Natural Gas Fired Boiler with low-NO_x Burner	2015	350 MMBtu/hr	None
B018	E018	Boiler 18[1]; Industrial Boiler Natural Gas Fired Boiler with low-NO_x Burner	2015	350 MMBtu/hr	None
B019	E019	Boiler 19[1]; Industrial Boiler Natural Gas Fired Boiler with low-NO_x Burner	2016	106 MMBtu/hr	None
B020	E020	Boiler 20[1]; Industrial Boiler Natural Gas Fired Boiler with low-NO_x Burner	2017	106 MMBtu/hr	None

1- Boiler Nos. 16, 17, 18, 19 are new affected units under Subpart Db to Part 60 and Subpart DDDDD to Part 63.

2.0. General Conditions

2.1. Definitions

2.1.1. All references to the "West Virginia Air Pollution Control Act" or the "Air Pollution Control Act" mean those provisions contained in W.Va. Code §§ 22-5-1 to 22-5-18.

2.1.2. The "Clean Air Act" means those provisions contained in 42 U.S.C. §§ 7401 to 7671q, and regulations promulgated thereunder.

2.1.3. "Secretary" means the Secretary of the Department of Environmental Protection or such other person to whom the Secretary has delegated authority or duties pursuant to W.Va. Code §§ 22-1-6 or 22-1-8 (45CSR§30-2.12.). The Director of the Division of Air Quality is the Secretary's designated representative for the purposes of this permit.

2.2. Acronyms

CAAA	Clean Air Act Amendments	**NO_X**	Nitrogen Oxides
CBI	Confidential Business Information	**NSPS**	New Source Performance Standards
CEM	Continuous Emission Monitor	**PM**	Particulate Matter
CES	Certified Emission Statement	**$PM_{2.5}$**	Particulate Matter less than 2.5 μm in diameter
C.F.R. *or* CFR	Code of Federal Regulations	**PM_{10}**	Particulate Matter less than 10μm in diameter
CO	Carbon Monoxide	**Ppb**	Pounds per Batch
C.S.R. *or* CSR	Codes of State Rules	**Pph**	Pounds per Hour
DAQ	Division of Air Quality	**Ppm**	Parts per Million
DEP	Department of Environmental Protection	**Ppm_V or ppmv**	Parts per Million by Volume
dscm	Dry Standard Cubic Meter	**PSD**	Prevention of Significant Deterioration
FOIA	Freedom of Information Act	**Psi**	Pounds per Square Inch
HAP	Hazardous Air Pollutant	**SIC**	Standard Industrial Classification
HON	Hazardous Organic NESHAP	**SIP**	State Implementation Plan
HP	Horsepower	**SO_2**	Sulfur Dioxide
lbs/hr	Pounds per Hour	**TAP**	Toxic Air Pollutant
LDAR	Leak Detection and Repair	**TPY**	Tons per Year
M	Thousand	**TRS**	Total Reduced Sulfur
MACT	Maximum Achievable Control Technology	**TSP**	Total Suspended Particulate
MDHI	Maximum Design Heat Input	**USEPA**	United States Environmental Protection Agency
MM	Million	**UTM**	Universal Transverse Mercator
MMBtu/hr *or* mmbtu/hr	Million British Thermal Units per Hour	**VEE**	Visual Emissions Evaluation
MMCF/hr *or* mmcf/hr	Million Cubic Feet per Hour	**VOC**	Volatile Organic Compounds
NA	Not Applicable	**VOL**	Volatile Organic Liquids
NAAQS	National Ambient Air Quality Standards		
NESHAPS	National Emissions Standards for Hazardous Air Pollutants		

2.3. Authority

This permit is issued in accordance with West Virginia Air Pollution Control Act W.Va. Code §§ 22-5-1. et seq. and the following Legislative Rules promulgated thereunder:

2.3.1. 45CSR13 – *Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits and Procedures for Evaluation*;

2.3.2. 45CSR14 – *Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution for the Prevention of Significant Deterioration;*

2.4. Term and Renewal

2.4.1. This permit supersedes and replaces previously issued Permit R13-3111C. This Permit shall remain valid, continuous and in effect unless it is revised, suspended, revoked or otherwise changed under an applicable provision of 45CSR13 or any other applicable legislative rule;

2.5. Duty to Comply

2.5.1. The permitted facility shall be constructed and operated in accordance with the plans and specifications filed in Permit Application R13-3111, R13-3111A, R13-3111B, R13-3111C, R13-3111D and any modifications, administrative updates, or amendments thereto. The Secretary may suspend or revoke a permit if the plans and specifications upon which the approval was based are not adhered to;
[45CSR§§13-5.11 and 10.3.]

2.5.2. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the West Virginia Code and the Clean Air Act and is grounds for enforcement action by the Secretary or USEPA;

2.5.3. Violations of any of the conditions contained in this permit, or incorporated herein by reference, may subject the permittee to civil and/or criminal penalties for each violation and further action or remedies as provided by West Virginia Code 22-5-6 and 22-5-7;

2.5.4. Approval of this permit does not relieve the permittee herein of the responsibility to apply for and obtain all other permits, licenses, and/or approvals from other agencies; i.e., local, state, and federal, which may have jurisdiction over the construction and/or operation of the source(s) and/or facility herein permitted.

2.6. Duty to Provide Information

The permittee shall furnish to the Secretary within a reasonable time any information the Secretary may request in writing to determine whether cause exists for administratively updating, modifying, revoking, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Secretary copies of records to be kept by the permittee. For information claimed to be confidential, the permittee shall furnish such records to the Secretary along with a claim of confidentiality in accordance with 45CSR31. If confidential information is to be sent to USEPA, the permittee shall directly provide such information to USEPA along with a claim of confidentiality in accordance with 40 C.F.R. Part 2.

2.7. Duty to Supplement and Correct Information

Upon becoming aware of a failure to submit any relevant facts or a submittal of incorrect information in any permit application, the permittee shall promptly submit to the Secretary such supplemental facts or corrected information.

2.8. Administrative Update

The permittee may request an administrative update to this permit as defined in and according to the procedures specified in 45CSR13.
[45CSR§13-4.]

2.9. Permit Modification

The permittee may request a minor modification to this permit as defined in and according to the procedures specified in 45CSR13.
[45CSR§13-5.4.]

2.10 Major Permit Modification

The permittee may request a major modification as defined in and according to the procedures specified in 45CSR14 or 45CSR19, as appropriate.
[45CSR§13-5.1]

2.11. Inspection and Entry

The permittee shall allow any authorized representative of the Secretary, upon the presentation of credentials and other documents as may be required by law, to perform the following:

a. At all reasonable times (including all times in which the facility is in operation) enter upon the permittee's premises where a source is located or emissions related activity is conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times (including all times in which the facility is in operation) any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and

d. Sample or monitor at reasonable times substances or parameters to determine compliance with the permit or applicable requirements or ascertain the amounts and types of air pollutants discharged.

2.12. Emergency

2.12.1. An "emergency" means any situation arising from sudden and reasonable unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

2.12.2. Effect of any emergency. An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emission limitations if the conditions of Section 2.12.3 are met.

2.12.3. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

a. An emergency occurred and that the permittee can identify the cause(s) of the emergency;

b. The permitted facility was at the time being properly operated;

c. During the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and

d. The permittee submitted notice of the emergency to the Secretary within one (1) working day of the time when emission limitations were exceeded due to the emergency and made a request for variance, and as applicable rules provide. This notice must contain a detailed description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

2.12.4. In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency has the burden of proof.

2.12.5 The provisions of this section are in addition to any emergency or upset provision contained in any applicable requirement.

2.13. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a permittee in an enforcement action that it should have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. However, nothing in this paragraph shall be construed as precluding consideration of a need to halt or reduce activity as a mitigating factor in determining penalties for noncompliance if the health, safety, or environmental impacts of halting or reducing operations would be more serious than the impacts of continued operations.

2.14. Suspension of Activities

In the event the permittee should deem it necessary to suspend, for a period in excess of sixty (60) consecutive calendar days, the operations authorized by this permit, the permittee shall notify the Secretary, in writing, within two (2) calendar weeks of the passing of the sixtieth (60) day of the suspension period.

2.15. Property Rights

This permit does not convey any property rights of any sort or any exclusive privilege.

2.16. Severability

The provisions of this permit are severable and should any provision(s) be declared by a court of competent jurisdiction to be invalid or unenforceable, all other provisions shall remain in full force and effect.

2.17. Transferability

This permit is transferable in accordance with the requirements outlined in Section 10.1 of 45CSR13. **[45CSR§13-10.1.]**

2.18. Notification Requirements

The permittee shall notify the Secretary, in writing, no later than thirty (30) calendar days after the actual startup of the operations authorized under this permit.

2.19. Credible Evidence

Nothing in this permit shall alter or affect the ability of any person to establish compliance with, or a violation of, any applicable requirement through the use of credible evidence to the extent authorized by law. Nothing in this permit shall be construed to waive any defense otherwise available to the permittee including, but not limited to, any challenge to the credible evidence rule in the context of any future proceeding.

3.0. Facility-Wide Requirements

3.1. Limitations and Standards

3.1.1. **Open burning.** The open burning of refuse by any person, firm, corporation, association or public agency is prohibited except as noted in 45CSR§6-3.1.
[45CSR§6-3.1.]

3.1.2. **Open burning exemptions.** The exemptions listed in 45CSR§6-3.1 are subject to the following stipulation: Upon notification by the Secretary, no person shall cause, suffer, allow or permit any form of open burning during existing or predicted periods of atmospheric stagnation. Notification shall be made by such means as the Secretary may deem necessary and feasible.
[45CSR§6-3.2.]

3.1.3. **Asbestos.** The permittee is responsible for thoroughly inspecting the facility, or part of the facility, prior to commencement of demolition or renovation for the presence of asbestos and complying with 40 C.F.R. § 61.145, 40 C.F.R. § 61.148, and 40 C.F.R. § 61.150. The permittee, owner, or operator must notify the Secretary at least ten (10) working days prior to the commencement of any asbestos removal on the forms prescribed by the Secretary if the permittee is subject to the notification requirements of 40 C.F.R. § 61.145(b)(3)(i). The USEPA, the Division of Waste Management, and the Bureau for Public Health - Environmental Health require a copy of this notice to be sent to them.
[40CFR§61.145(b) and 45CSR§34]

3.1.4. **Odor.** No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor at any location occupied by the public.
[45CSR§4-3.1] ***[State Enforceable Only]***

3.1.5. **Permanent shutdown.** A source which has not operated at least 500 hours in one 12-month period within the previous five (5) year time period may be considered permanently shutdown, unless such source can provide to the Secretary, with reasonable specificity, information to the contrary. All permits may be modified or revoked and/or reapplication or application for new permits may be required for any source determined to be permanently shutdown.
[45CSR§13-10.5.]

3.1.6. **Standby plan for reducing emissions.** When requested by the Secretary, the permittee shall prepare standby plans for reducing the emissions of air pollutants in accordance with the objectives set forth in Tables I, II, and III of 45CSR11.
[45CSR§11-5.2.]

3.2. Monitoring Requirements

[Reserved]

3.3. Testing Requirements

3.3.1. **Stack testing.** As per provisions set forth in this permit or as otherwise required by the Secretary, in accordance with the West Virginia Code, underlying regulations, permits and orders, the permittee shall conduct test(s) to determine compliance with the emission limitations set forth in this permit and/or established or set forth in underlying documents. The Secretary, or his duly authorized representative, may at his option witness or conduct such test(s). Should the Secretary exercise his option to conduct such test(s), the operator shall provide all necessary sampling

connections and sampling ports to be located in such manner as the Secretary may require, power for test equipment and the required safety equipment, such as scaffolding, railings and ladders, to comply with generally accepted good safety practices. Such tests shall be conducted in accordance with the methods and procedures set forth in this permit or as otherwise approved or specified by the Secretary in accordance with the following:

a. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with 40 C.F.R. Parts 60, 61, and 63 in accordance with the Secretary's delegated authority and any established equivalency determination methods which are applicable. If a testing method is specified or approved which effectively replaces a test method specified in the permit, the permit may be revised in accordance with 45CSR§13-4. or 45CSR§13-5.4 as applicable.

b. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with applicable requirements which do not involve federal delegation. In specifying or approving such alternative testing to the test methods, the Secretary, to the extent possible, shall utilize the same equivalency criteria as would be used in approving such changes under Section 3.3.1.a. of this permit. If a testing method is specified or approved which effectively replaces a test method specified in the permit, the permit may be revised in accordance with 45CSR§13-4. or 45CSR§13-5.4 as applicable.

c. All periodic tests to determine mass emission limits from or air pollutant concentrations in discharge stacks and such other tests as specified in this permit shall be conducted in accordance with an approved test protocol. Unless previously approved, such protocols shall be submitted to the Secretary in writing at least thirty (30) days prior to any testing and shall contain the information set forth by the Secretary. In addition, the permittee shall notify the Secretary at least fifteen (15) days prior to any testing so the Secretary may have the opportunity to observe such tests. This notification shall include the actual date and time during which the test will be conducted and, if appropriate, verification that the tests will fully conform to a referenced protocol previously approved by the Secretary.

d. The permittee shall submit a report of the results of the stack test within sixty (60) days of completion of the test. The test report shall provide the information necessary to document the objectives of the test and to determine whether proper procedures were used to accomplish these objectives. The report shall include the following: the certification described in paragraph 3.5.1.; a statement of compliance status, also signed by a responsible official; and, a summary of conditions which form the basis for the compliance status evaluation. The summary of conditions shall include the following:

1. The permit or rule evaluated, with the citation number and language;
2. The result of the test for each permit or rule condition; and,
3. A statement of compliance or noncompliance with each permit or rule condition.

[WV Code § 22-5-4(a)(14-15) and 45CSR13]

3.4. Recordkeeping Requirements

3.4.1. **Retention of records.** The permittee shall maintain records of all information (including monitoring data, support information, reports, and notifications) required by this permit recorded in a form suitable and readily available for expeditious inspection and review. Support information includes all calibration and maintenance records and all original strip-chart recordings for

continuous monitoring instrumentation. The files shall be maintained for at least five (5) years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. At a minimum, the most recent two (2) years of data shall be maintained on site. The remaining three (3) years of data may be maintained off site, but must remain accessible within a reasonable time. Where appropriate, the permittee may maintain records electronically (on a computer, on computer floppy disks, CDs, DVDs, or magnetic tape disks), on microfilm, or on microfiche.

3.4.2. **Odors.** For the purposes of 45CSR4, the permittee shall maintain a record of all odor complaints received, any investigation performed in response to such a complaint, and any responsive action(s) taken.
[45CSR§4. *State Enforceable Only.*]

3.5. Reporting Requirements

3.5.1. **Responsible official.** Any application form, report, or compliance certification required by this permit to be submitted to the DAQ and/or USEPA shall contain a certification by the responsible official that states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

3.5.2. **Confidential information.** A permittee may request confidential treatment for the submission of reporting required by this permit pursuant to the limitations and procedures of W.Va. Code § 22-5-10 and 45CSR31.

3.5.3. **Correspondence.** All notices, requests, demands, submissions and other communications required or permitted to be made to the Secretary of DEP and/or USEPA shall be made in writing and shall be deemed to have been duly given when delivered by hand, or mailed first class with postage prepaid to the address(es) set forth below or to such other person or address as the Secretary of the Department of Environmental Protection may designate:

If to the DAQ:
Director
WVDEP
Division of Air Quality
601 57th Street
Charleston, WV 25304-2345

If to the US EPA:
Associate Director
Office of Air Enforcement and Compliance Assistance
(3AP20)
U.S. Environmental Protection Agency
Region III
1650 Arch Street
Philadelphia, PA 19103-2029

3.5.4. Operating Fee

3.5.4.1. In accordance with 45CSR30 – Operating Permit Program, the permittee shall submit a certified emissions statement and pay fees on an annual basis in accordance with the submittal requirements of the Division of Air Quality. A receipt for the appropriate fee shall be maintained on the premises for which the receipt has been issued, and shall be made immediately available for inspection by the Secretary or his/her duly authorized representative.

3.5.5. **Emission inventory.** At such time(s) as the Secretary may designate, the permittee herein shall prepare and submit an emission inventory for the previous year, addressing the emissions from the facility and/or process(es) authorized herein, in accordance with the emission inventory submittal requirements of the Division of Air Quality. After the initial submittal, the Secretary may, based

upon the type and quantity of the pollutants emitted, establish a frequency other than on an annual basis.

4.0. Source-Specific Requirements

4.1. Limitations and Standards

4.1.1. The following conditions and requirements are specific to Boiler Nos. 19 and 20:

a. CO emissions emitted to the atmosphere from each boiler shall not exceed 3.91 pounds per hour with an annual rate not to exceed 17.13 tpy. Compliance with this limit shall be satisfied by optimization of the CO concentration from the unit during the tune-up as required in Condition 4.1.3. and satisfying Condition 4.1.1.e.

b. NO_x emissions emitted to the atmosphere from each boiler shall not exceed 0.037 pounds per MMBtu. Compliance with this limit shall be determined on a continuous basis through the use of a 30-day rolling average emission rate. A new 30-day rolling average emission rate is calculated each steam generating unit operating day as the average of all of the hourly NO_X emission data for the preceding 30 steam generating unit operating days. This limit applies at all times including periods of startup, shutdown, or malfunction.
[40 CFR §60.44b(a), (h), and (i); 40 CFR §60.46b(e)(3)]

c. Each boiler shall only be fired with pipeline quality natural gas. This condition satisfies compliance with the limitations of 45CSR§2-3.1., 45CSR§2-4.1.b. and 45CSR§10-3.1.e.

d. Each boiler shall be equipped, maintained, operated with a continuous oxygen trim system that maintains an optimum air to fuel ratio for the unit. Such system shall be installed upon initial start-up of the unit.
[40 CFR §63.7575]

e. Each boiler shall be designed or constructed with a maximum design heat input of 106 MMBtu/hr. Compliance with this limit for the boiler shall be satisfied by limiting the annual consumption of natural gas to 910.35 MM cubic feet, measured as a 12 month rolling total.

4.1.2. The following conditions and requirements are specific to Boilers 16, 17, and 18:

a. CO emissions emitted to the atmosphere from each boiler shall not exceed 12.0 pounds per hour on a 3-hour average with an annual rate not to exceed 52.4 tpy. Initial compliance with this limit shall be satisfied through testing as required in Condition 4.3.1. After the initial compliance demonstration, verifying compliance with this hourly limit shall be satisfied by optimization of the CO concentration from the unit during the tune-up as required in Condition 4.1.4.and verifying compliance with the annual limit shall be determined by satisfying the fuel usage limit of Condition 4.1.3.e.

b. NO_x emissions emitted to the atmosphere from each boiler shall not exceed 0.036 pounds per MMBtu. Compliance with this limit shall be determined on a continuous basis through the use of a 30-day rolling average emission rate. A new 30-day rolling average emission rate is calculated each steam generating unit operating day as the average of all of the hourly NO_X emission data for the preceding 30 steam generating unit operating days. This limit applies at all times including periods of startup, shutdown, or malfunction.
[40 CFR §60.44b(a), (h), and (i); 40 CFR §60.46b(e)(3)]

c. Each boiler shall only be fired with pipeline quality natural gas. This condition satisfies compliance with the limitations of 45CSR§2-3.1., 45CSR§2-4.1.b. and 45CSR§10-3.1.e.

d. Each boiler shall be equipped, maintained, operated with a continuous oxygen trim system that maintains an optimum air to fuel ratio for each unit. Such system shall be installed upon initial start-up of the unit.

[40 CFR §63.7575]

e. Each boiler shall be designed or constructed with a maximum design heat input of no greater than 350 MMBtu/hr. Compliance with this limit for each boiler shall be satisfied by limiting the annual consumption of natural gas to 2,942.4 MM cubic feet, measured as a 12 month rolling total.

4.1.3. The permittee shall conduct the initial tune-up and subsequent tune-ups for the boilers in accordance with the following timing and tune-up requirements:

a. The initial tune up for Boiler Nos. 16, 17, 18, 19, and 20 shall be completed no later than 61 months after initial start-up of each affected unit respectively.
[40 CFR §63.7510(g) & §63.7490(b)]

b. Subsequent tune-ups for Boilers Nos. 16, 17, 18, 19, and 20 shall be completed no later than 61 months after the previous tune-up.
[40 CFR §63.7515(d) § 63.7540(a)(12)]

c. Each tune-up shall consist of the following:

i. As applicable, inspect the burner, and clean or replace any components of the burner as necessary (permittee may delay the burner inspection until the next scheduled unit shutdown). At units where entry into a piece of process equipment or into a storage vessel is required to complete the tune-up inspections, inspections are required only during planned entries into the storage vessel or process equipment;

ii. Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available;

iii. Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (you may delay the inspection until the next scheduled unit shutdown);

iv. Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, which includes the manufacturer's NOx concentration specification of 30 ppm;

v. Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer.

[40 CFR §63.7500(a)(1), §63.7505(a), §§63.7510(g), §63.7515(d), §63.7540(a)(12), and Table 3 to Subpart DDDDD of Part 63—Work Practice Standards]

4.1.4. Within 180 days after initial start-up of Boiler Nos. 16, 17, and 18 or no later than after the first 90 consecutive operating days of any one of Boiler Nos. 16, 17, and 18, the permittee must permanently shut-down Boiler Nos. 10, 11, and 12 in Power House #2.
[45 CSR 14-2.46.h.]

4.1.5. **Operation and Maintenance of Air Pollution Control Equipment.** The permittee shall, to the extent practicable, install, maintain, and operate all pollution control equipment listed in Section 1.0 and associated monitoring equipment in a manner consistent with safety and good air pollution control practices for minimizing emissions, or comply with any more stringent limits set forth in

this permit or as set forth by any State rule, Federal regulation, or alternative control plan approved by the Secretary.
[45CSR§13-5.11.]

4.2. Monitoring Requirements

4.2.1. The permittee shall record and maintain records of the amount of natural gas consumed by Boiler Nos. 16, 17, 18, 19 and 20 during each day and calculate the annual capacity factor for the reporting period. The annual capacity factor is determined on a 12-month rolling average basis with a new annual capacity calculated at the end of each calendar month. Such records shall be maintained in accordance with Condition 3.4.1. of this permit.
[40 CFR §60.49b(d)(1)]

4.2.2. For Boiler Nos. 16, 17, 18, 19, and 20, the permittee shall install, operate, certify, and maintain a continuous emission monitoring system (CEMS) for measuring NO_x, and diluent gas (CO_2 or O_2) from the exhaust of each boiler in accordance with the applicable Performance Specifications under Appendix B to Part 60 of Chapter 40 or a NO_X CEMS that meets the requirements of Part 75 of Chapter 40 of the Code of Federal Regulations. A NO_x CEMS installed, operated, maintained and continuing to meet the ongoing requirements of Part 75 of the Chapter 40, may be used for the purpose of demonstrating compliance with the NO_x in Condition 4.1.3.b., except that the permittee shall also meet the requirements of §60.49b. Such monitor system shall include an automated data acquisition and handling system (DAHS). All required certification tests of the monitoring system for Boiler Nos. 16, 17, and 18 must be completed no later than 90 unit operating days or 180 calendar days (whichever is sooner) after initial start-up of each boiler. All required certification tests of the monitoring system for Boiler Nos. 19 and 20 must be completed 180 calendar days after initial start-up.

The procedures under 40 CFR §60.13 shall be followed for installation, evaluation, and operation of the continuous monitoring systems. The span value for NO_x shall be 500 ppm or the value determined according to Section 2.1.2. in Appendix A to Part 75 of Chapter 40.

The CEMS required under this condition shall be operated and data recorded during all periods of operation of the respected boiler except for CEMS breakdowns and repairs. Data is recorded during calibration checks, and zero and span adjustments.

The 1-hour average NO_x emission rates measured by the continuous NO_X monitor required by this condition and required under 40 CFR §60.13(h) shall be expressed in lb/MMBtu heat input and shall be used to calculate the average emission rates under item b of Condition 4.1.3. The 1-hour averages shall be calculated using the data points required under 40 CFR §60.13(h)(2).

When NO_X emission data are not obtained because of CEMS breakdowns, repairs, calibration checks and zero and span adjustments, emission data will be obtained by using standby monitoring systems, Method 7 of appendix A of this part, Method 7A of Appendix A of this part, or other approved reference methods to provide emission data for a minimum of 75 percent of the operating hours in each steam generating unit operating day, in at least 22 out of 30 successive steam generating unit operating days.

CEMS unit conforming to the specifications of 40 CFR Part 75 shall use unbiased, un-substituted data to demonstrate compliance with the limits as specified in this permit.

For purposes of calculating data averages, the permittee cannot use data recorded during periods of monitoring malfunctions, associated repairs, out-of–control periods, required quality assurance or

control activities. The permittee must use all the data collected during all other periods in assessing compliance with the emission limit permitted in Condition 4.1.3. Any periods for which the monitoring system is out of control and data are not available for required calculations constitute a deviation from the monitoring requirements. Records of all data collected, calibrations, calibration checks, relative accuracy tests, maintenance preformed, and malfunctions of the CEMS shall be maintained in accordance with Condition 3.4.1. of this permit.
[40 CFR §§60.48b(b) though (f), 45 CSR §40-71. and 40 CFR §75.20.]

4.3. Testing Requirements

4.3.1. The purpose of this requirement is for the permittee to demonstrating initial compliance with the CO emission limit in Condition 4.1.3.a. Within 180 days after start-up and a satisfactory performance evaluation of the NOx CEMs, the permittee shall conduct initial performance testing for Boiler Nos. 16, 17, and 18 to demonstrate initial compliance with the hourly CO rate in Condition 4.1.3.a. for each unit. The permittee shall conduct such testing at 90 percent or greater of each unit's maximum design heat input, in accordance with Test Method 10B from Appendix A to 40 CFR Part 60, and Condition 3.3.1. In the test report, the permittee shall include the NO_x measurement from the NO_x CEM for each test run of each test. Records of this testing shall be maintained in accordance with Condition 3.4.1.

4.3.2. To determine initial compliance with the emission limits for NO_x required under 40 CFR §60.44b and Conditions 4.1.1.b. and 4.1.2.b., the permittee shall conduct the performance test for Boiler Nos. 16, 17, 18, 19, and 20 as required under 40 CFR §60.8 using the continuous system for monitoring NO_x (NO_x CEMS) under Condition 4.2.3. Such testing shall be conducted within 60 days after achieving the maximum production rate at which the affected unit will be operated, but not later than 180 days after initial startup of the boiler.

NO_X emissions from the steam generating unit are to be monitored for 30 successive steam generating unit operating days and the 30-day average emission rate is used to determine compliance with the NO_x emission standards under Condition 4.1.3.b. and 40 CFR §60.44b. The 30-day average emission rate is calculated as the average of all hourly emissions data recorded by the monitoring system during the 30-day test period. Such testing shall be conducted in accordance with Condition 3.3.1. and 40 CFR §60.46b. Records of this testing shall be maintained in accordance with Condition 3.4.1.
[40 CFR §60.8, §60.46b(c) & (e)(1)]

4.4. Recordkeeping Requirements

4.4.1. **Record of Monitoring.** The permittee shall keep records of monitoring information that include the following:

a. The date, place as defined in this permit, and time of sampling or measurements;

b. The date(s) analyses were performed;

c. The company or entity that performed the analyses;

d. The analytical techniques or methods used;

e. The results of the analyses; and

f. The operating conditions existing at the time of sampling or measurement.

4.4.2. **Record of Maintenance of Air Pollution Control Equipment.** For all pollution control equipment listed in Section 1.0, the permittee shall maintain accurate records of all required pollution control equipment inspection and/or preventative maintenance procedures.

4.4.3. **Record of Malfunctions of Air Pollution Control Equipment.** For all air pollution control equipment listed in Section 1.0, the permittee shall maintain records of the occurrence and duration of any malfunction or operational shutdown of the air pollution control equipment during which excess emissions occur. For each such case, the following information shall be recorded:

a. The equipment involved.

b. Steps taken to minimize emissions during the event.

c. The duration of the event.

d. The estimated increase in emissions during the event.

For each such case associated with an equipment malfunction, the additional information shall also be recorded:

e. The cause of the malfunction.

f. Steps taken to correct the malfunction.

g. Any changes or modifications to equipment or procedures that would help prevent future recurrences of the malfunction.

4.4.4. The permittee shall keep the following records in accordance with 40CFR§63.7555. This includes but is not limited to the following information during the tune-up as required in Condition 4.1.3. and 40 CFR §63.7540:

a. The concentrations of CO in the effluent stream in parts per million by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the boiler or process heater. During the tune-up, concentrations of NO_x from the CEMS of the unit shall be included; and

b. A description of any corrective actions taken as a part of the tune-up.
[40 CFR §§63.7540 (a)(12), and 63.7555]

4.4.5. The permittee shall maintain records of the following information for each steam generating unit operating day of Boiler Nos. 16, 17, 18, 19, and 20:

a. Calendar date;

b. The average hourly NO_X emission rates (expressed as NO_2) (lb/MMBtu heat input) measured or predicted;

c. The 30-day average NO_X emission rates (lb/MMBtu heat input) calculated at the end of each steam generating unit operating day from the measured or predicted hourly nitrogen oxide emission rates for the preceding 30 steam generating unit operating days;

d. Identification of the steam generating unit operating days when the calculated 30-day average NO_X emission rates are in excess of the NO_X emissions standards under §60.44b, with the reasons for such excess emissions as well as a description of corrective actions taken;

e. Identification of the steam generating unit operating days for which pollutant data have not been obtained, including reasons for not obtaining sufficient data and a description of corrective actions taken;

f. Identification of the times when emission data have been excluded from the calculation of average emission rates and the reasons for excluding data;

g. Identification of "F" factor used for calculations, method of determination, and type of fuel combusted;

h. Identification of the times when the pollutant concentration exceeded full span of the CEMS;

i. Description of any modifications to the CEMS that could affect the ability of the CEMS to comply with Performance Specification 2 or 3; and

j. Results of daily CEMS drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1 of Part 60.

Such records shall be maintained in accordance with Condition 3.4.1. of this permit.
[40 CFR §60.49b(g)]

4.5. Reporting Requirements

4.5.1. The permittee shall submit a "Notification of Compliance Status" for boiler Nos. 16, 17, 18, 19, and 20 to the Director before the close of business on the sixtieth (60^{th}) day after completion of the initial compliance demonstration as required in Condition 4.1.3. Such "Notification of Compliance Status" shall be in accordance with 40 CFR §63.9(h)(2(ii) and contain the information specified in 40 CFR §§63.7545(e)(1), and (8), which includes a statement the initial tune-up for each boiler was completed.
[40CFR§63.7545(e)]

4.5.2. The permittee shall submit an "Initial Notification" to the Director of the initial start-up of Boiler Nos. 16, 17, 18, 19, and 20 within 15 days after the actual date of start-up. This Initial Notification supersedes the notification requirements of Condition 2.18.
[40CFR§§63.7545(c) & 40 CFR §60.49b(a), §60.7]

4.5.3. The permittee shall submit "5-year Compliance Reports" for the Boiler Nos. 16, 17, 18, 19, and 20 electronically using CEDRI that is accessed through the EPA's Center Data Exchange (CDX) (www.epa.gov/cdx). However, if the reporting form for this report is not available in CEDRI at the time the report is due, the permittee shall submit the report to the Administrator and Director using the addresses listed in Condition 3.5.3. The first compliance report shall be submitted no later than five years after the initial start-up of the unit and the first date ending on January 31. Subsequent reports shall be submitted once every five years afterwards. Such reports shall contain the information specified in 40 CFR §§63.7550(c)(1) which are:

a. Permittee and facility name, and address;

b. Process unit information, emission limitations, and operating limitations;

c. Date of report and beginning and ending dates of the reporting period;

d. Include the date of the most recent tune-up for each boiler; and

e. Include the date of the most recent burner inspection if it was not done on a five-year frequency and was delayed until the next scheduled or unscheduled unit shutdown.

The permittee shall maintain records of such reports in accordance with Condition 3.4.1. **[40CFR §§63.7550(b), (b)(1), (c)(1), & (c)(5)(i) though (iv) and (xiv), and (h)(3)]**

4.5.5. The permittee shall submit to the Director within 60 days of completion of NO_x CEMS performance evaluation for Boiler Nos. 16, 17, 18, 19, and 20 two copies of the performance evaluation report for each unit of satisfy Part 60 notification requirements for certifying the NO_x CEMS. A copy of the NO_x CMS Certification Application required by 45 CSR §40-74.3 and 40 CFR §75.63(a)(1) provisions shall be submitted in the Administrator and Director within 45 days of completion of all CEM certification tests, which shall include the information as prescribed in 40 CFR §75.63(b). **[45 CSR §40-73.1., 45 CSR §40-74.3, 40 CFR §60.13(c)(2), 40 CFR §60.49b(b), and 40 CFR §75.63.(a)(1)]**

4.5.6. The permittee shall submit semiannual and annual reports to the Director for Boiler Nos. 16, 17, 18, 19, and 20. The reporting period for these reports shall be January 1st through June 30th and July 1st through December 31st. Such reports shall be submitted with the facility's Title V Compliance Report. These reports shall contain the recorded information as required in Condition 4.4.5. **[40 CFR §60.49b(g), (i), & (w)]**

4.5.7. The permittee shall notify the Director in writing within 15 days of satisfying the requirements in Condition 4.1.4.

CERTIFICATION OF DATA ACCURACY

I, the undersigned, hereby certify that, based on information and belief formed after reasonable inquiry, all information contained in the attached _____, representing the period beginning _____ and ending _____, and any supporting documents appended hereto, is true, accurate, and complete.

Signature[1] (please use blue ink) _____ Responsible Official or Authorized Representative _____ Date

Name & Title (please print or type) _____ Name _____ Title

Telephone No. _____ Fax No. _____

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[1] This form shall be signed by a "Responsible Official." "Responsible Official" means one of the following:

a. For a corporation: The president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either:

(i) the facilities employ more than 250 persons or have a gross annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars), or

(ii) the delegation of authority to such representative is approved in advance by the Director;

b. For a partnership or sole proprietorship: a general partner or the proprietor, respectively;

c. For a municipality, State, Federal, or other public entity: either a principal executive officer or ranking elected official. For the purposes of this part, a principal executive officer of a Federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of U.S. EPA); or

d. The designated representative delegated with such authority and approved in advance by the Director.

west virginia department of environmental protection

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ENGINEERING EVALUATION/FACT SHEET

BACKGROUND INFORMATION

Application No.:	R13-3111D
Plant ID No.:	039-00007
Applicant:	Bayer CropScience LP
Facility Name:	Institute Site
Location:	Institute
NAICS Code:	325320
Application Type:	Modification
Received Date:	December 12, 2016
Engineer Assigned:	Edward S. Andrews, P.E.
Fee Amount:	$2000.00
Date Received:	December 13, 2016
Complete Date:	December 13, 2016
Due Date:	March 13, 2017
Applicant Ad Date:	December 1, 2016
Newspaper:	*The Charleston Gazette*
UTM's:	Easting: 432.0 km Northing: 4,248.3 km Zone: 17
Description:	This application is for the additional installation of one 106 MM Btu/hr, natural gas fired boiler, which is identified as Boiler 20.

DESCRIPTION OF PROCESS

Bayer CropScience LP (Bayer) owns and operates Power House #2 at the Institute Plant. The plant is currently configured with one main steam plant (Power House No. 2). Power House No. 2 has three, 360 MMBtu/hr boilers with a steam output of about 225,000 pounds of steam per hour from each unit (Boilers 10, 11, and 12). This steam is needed to support the chemical manufacturing operation at the site. Due to downturns in the chemical manufacturing operation at the site, the demand for steam has seen a significant decrease over the past couple of years. In 2012, Bayer elected to permanently shut down Power House No. 1, which was configured with three, 180 MMBtu/hr gas-fired boilers. Once Power House No. 1 was shutdown, the site lost its flexibility to adjust steam output on short notice based on demand.

To resolve the reliability issues with the boilers in Power House No. 2 and prepare to ensure compliance with the Boiler MACT (Subpart DDDDD of Part 63), Bayer had elected to replace the units in Power House No. 2 with three package style boilers (Boiler Nos. 16, 17, and 18) as part of a new steam plant in the Institute Plant. These new boilers will be rated with a heat input of 350 MMBtu/hr for each unit and a steam output of 252,000 pounds per hour at 400 psi and 700^0F. Each of these units will be fueled solely with natural gas and each one vented to a dedicated stack.

Boilers 16 and 17 were constructed and scheduled to start-up before the end of 2016. However, each boiler experienced a catastrophic failure during the static hydro test of each unit as part of the commission phase for these new boilers. Currently, the Institute Site is receiving its steam from Power House #2. Bayer has committed to shutting down Power House #2 by no later than January 31, 2017, as part of Bayer's plan to achieve compliance with the Boiler MACT.

Bayer currently operates chemical manufacturing units at the Institute Plant. These units require a significant amount of heat energy to operate, which is in the form of steam. To avoid a shutdown of manufacturing units at the Institute Site while Boilers 16 and 17 are being repaired or replaced after Power House #2 ceases operations, Bayer has elected to install two additional 106 MMBtu/hr boiler. Boiler 19 is covered by R13-3111C. This application is for Boiler 20. Both boilers are identical.

Boiler 20 is equipped with low-NOx burners with flue gas recirculation to minimize the formation of thermal oxides of nitrogen (NO_x) while improving combustion efficiency. To better maintain combustion efficiency while minimizing the generation of carbon monoxide (CO), the boiler is equipped with oxygen trim systems that regulates the amount of combustion air that is introduced based on the oxygen level in the exhaust stream in the exhaust stack. To improve the overall thermal efficiency of the boiler, an economizer is proposed to be installed a part of the boiler, which is a heat exchanger in the exhaust stack that is used to preheat the boiler feed water prior to being introduced into the boiler.

SITE INSPECTION

On November 3, 2016, Mr. Todd Shrewsbury, P.E., a Compliance and Enforcement Engineer, and the writer conducted an announced site visit of the Institute Site. The Bayer representatives were Ms. Linda Tennant, Site Environmental Specialist, and Mr. Monty Buther, a Project Manager in the Engineering Department. Also, the writer requested UCC representatives to be on hand during this visit as well. UCC representatives included Mr. Freddie Sizemore, EHS Regulatory Specialist, Mr. Toby Scholl, P.E. Engineer, and project managers overseeing the installation of these boilers. During this visit, the writer was briefed on the steam capacity and demand at the facility and status of these proposed boilers from both companies.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

The applicant used pollutant specific emission factors from Chapter 1.4 of AP-42, collected emission data by Mr. Roy Huntly of EPA Region V and manufacturer's data to estimate emissions from the replacement boilers. The writer reproduced the estimated emissions from one replacement boiler, which are presented in the following table

Table No. 1 – Emissions from One 106 MMBtu/hr Boiler using Natural Gas			
Pollutant	**Emission Factor**	**Hourly Rate (lb/hr)**	**Annual Rate (tpy)**
PM Filterable/Condensable Fractions	0.00051 lb/MMBtu	0.054	0.24
PM_{10} Filterable/Condensable Fractions	0.00051 lb/MMBtu	0.054	0.24
$PM_{2.5}$ Filterable/Condensable Fractions	0.0004 lb/MMcf	0.042	0.18
Sulfur Dioxide (SO_2)	0.0006 lb/MMcf	0.06	0.26
Oxides of Nitrogen (NO_x)	0.0369 lb/MMBtu	3.91	17.13
Carbon Monoxide (CO)	0.0364 MMBtu	3.86	16.91
Volatile Organic Compounds (VOCs)	0.0054 lb/MMBtu	0.57	2.50
Total Hazardous Air Pollutants (HAPs)	0.0019 lb/MMBtu	0.20	0.88
Carbon Dioxide Equivalent* (CO_2e)	117.098 lb/MMBtu	12,412.39	54,366.27

* Based on factors and global warming potentials from Tables A-1, C-1, and C-2 of Part 98 published on Federal Register on November 29, 2013.

REGULATORY APPLICABLILITY

The Institute Site is a major source under Title V (45CSR30) and currently possesses a valid Title V Operating Permit. Under this program, new emission units have 12 months upon start-up to be incorporated in the facility's operating permit. The facility is currently classified as a major source for PM/PM_{10}/$PM_{2.5}$, NO_x, SO_2, CO, and VOC under Prevention of Significant Deterioration (PSD), Title V and for HAPs.

The first step in determining if the proposed action has triggered a major modification of a major source is to determine which pollutants that the project is major for, which are illustrated in the following table. Since Bayer re-opened R13-3111B, the PSD applicability determination must be re-evaluated with the proposed Boiler 20 in conjunction with Boiler No. 16, 17, 18 and

19.

Table No. 4 Step One of PSD Applicability						
Pollutant	Potential from the 3 Boilers in R13-3111B (tpy)	Potential for Boiler 19 (R13-3111C) (tpy)	Potential for Boiler 20 (tpy)	Project Total (tpy)	Significance Threshold (tpy)	Significance Trigger (Yes/No)
PM	23.01	0.24	0.24	23.49	25	No
PM_{10}	23.01	0.24	0.24	23.49	15	Yes
$PM_{2.5}$ Direct	23.01	0.20	0.20	23.41	10	Yes
SO_2 & precursor for $PM_{2.5}$	2.64	0.27	0.27	3.18	40	No
NO_x & precursor of Ozone and $PM_{2.5}$	167.01	16.87	16.87	200.75	40	Yes
CO	157.29	17.13	17.13	191.55	100	Yes
VOCs	24.49	2.50	2.50	29.49	40	No

This project represents a "significant emission increase" (45CSR§14-2.75) for PM, PM_{10}, $PM_{2.5}$, NO_x, and CO. The next step is to determine if this project results in a "net significant emission increase" pursuant to 45CSR§§14-3.4 and 2.80.c.

Basically, Boiler Nos. 16, 17, and 18 will replace the boilers located in Power House No. 2. Thus, the applicant selected the calendar years of 2013 and 2014 as the baseline period to determine the past actuals (24 consecutive month period) which is in accordance with 45 CSR §14-2.8. Step 2 of this PSD Applicability Determination is illustrated in the follow table, which includes the baseline emissions of Power House No. 2 and the new PTE of the five boilers to be covered be this permit. The writer verified the baseline emissions of Power House No. 2 from the facility's emission inventory reported to the agency in SLEIS for Emission Years 2013 and 2014.

PROCESS NAME	2-YEAR AVERAGE BASELINE	CO	NOX	PM-10	PM-2.5
NEW NETTING EVALUATION FOR INSTALLATION OF BOILER 20					
PTE for Boiler 20	New (2017)	17.13	16.87	0.24	0.20
PTE for Boiler 19	New (12/2016)	17.13	16.87	0.24	0.20
PTE Boilers 16,17,18	New	157.2	166.8	23.01	23.01
Shutting Down Powerhouse #2 in January 2017	2013/2014	94.46	1088	86.27	41.545
Net Change in Emissions		97.00	-887.46	--62.78	-18.13
PSD Significance Levels		100	40	15	10
Does the project result in a Net Significant Increase in Emissions		NO	NO	NO	NO

No other changes at the facility has occurred during this contemporaneous period (January 2011 through December 2016).

Therefore, the net emission change in $PM_{2.5}$, PM_{10}, NO_x, and CO emissions for this project is less than the significance level for each corresponding pollutant and the project does not pose a net significant increase in emissions of any regulated pollutant under the PSD program. Thus, this proposed project is not classified as a major modification and no further review under Rule 14 is required.

With regards to the National Ambient Air Quality Standards, Kanawha County is classified as attainment for all criteria pollutants as of March 31, 2014. Thus, no review of this proposed project is required for applicability under Rule 19 (West Virginia's Non-attainment Permitting Rule) for this particular application. Therefore, this proposed project does not require a permit under PSD and/or Non-Attainment New Source Review.

Boiler No. 20 is subject to the same applicable rules and regulations as Boiler Nos. 16, 17, 18, and 19. The requirements to comply with these rules and regulations are minimal for natural gas fired boilers to comply with the applicable emission standards. Boiler 20 will only be capable of consuming natural gas. It is understood that sources burning this fuel are significantly below the applicable allowable limitations in Rule 2 and Rule 10, which are the State of West Virginia's rules addressing particulate matter (PM) and sulfur dioxide (SO_2) from boilers, regardless of the size of the unit. This understanding is confirmed with the provisions in Rules 2A and 10A, which exempts such sources from conducting periodic testing and monitoring for demonstrating compliance with the limitations under these rules. The permit will restrict the fuel type for Boiler 20 to natural gas which would ensure compliance with the applicable emission standards of these rules.

Boiler 20 is subject to the New Source Performance Standards of Subpart Db since the unit will have a design heat input rating of greater than 100 MMBtu/hr. Subpart Db establishes performance standards by pollutant and by fuel type (i.e. coal, oil, and natural gas). For natural gas-fired units, the subpart only establishes a performance standard for NO_x emissions. Boiler 20 will be constructed after July 9, 1997 which makes the unit applicable to the limit in 40 CFR §60.44b(l) of 0.20 lb of NOx (expressed as NO_2) per MMBtu. These units will be equipped with a low-NOx burner using flue gas recirculation with a maximum NO_x rate of 0.037 lb/MMBtu. At this NO_x rating, these units would have a margin of compliance of 82% of the applicable NO_x limit.

Subpart Db requires affected sources to demonstrate compliance with the NO_x limit on a 30-day rolling average. This subpart requires the use of a NO_x continuous emission monitoring system (NO_x CEMS) with a means to measure either O_2 or CO_2 in the exhaust for demonstrating compliance with the NO_x emission standard.

The facility is currently classified as a major source of HAPs, which means the facility has the potential to emit 10 tons per year of a single HAP or 25 tpy of total HAPs. Within the application, Bayer has not elected to determine if this project would change the facility's major

source status for HAPs. Thus, Boiler 20 is subject to 40 CFR 63, Subpart DDDDD – National Emission Standard for Hazardous Air Pollutants (NESHAP) for Major Sources: Industrial Commercial, and Institutional Boilers and Process Heaters.

This regulation establishes work practices to comply with the emission standards (see Item 3 of Table 3 to Subpart DDDDD of Part 63). Boiler No. 20 will be equipped with oxygen trim systems to optimize the combustion air to minimize CO emissions. The rule recognizes this type of combustion control and defers the annual tune-up requirement to be performed once every five years in accordance with 40 CFR §63.7540. This boiler under Subpart DDDDD will be considered as a new unit. The one-time energy assessment is not required for new units. Therefore, the energy assessment is not applicable for this boiler.

The proposed change in permitted emissions from Boiler No. 20 are less than 6 pounds per hour. However, the timing of the requests between Boilers 19 and 20 are very close. The DAQ views the installation of Boiler Nos. 19 and 20 as one project. Thus, the sum of the hourly emissions from Boiler Nos. 19 and 20 exceed 6 pounds per hour and 10 tons per year for CO and NO_x. Therefore, the whole project meets the definition of modification under Rule 13. Thus, the change meets the criteria of a "modification" under 45 CSR 13. Bayer has prepared and submitted a complete application, paid the filing fee, and published a Class I Legal ad in *The Charleston Gazette* on December 1, 2016.

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

Boiler 20 will not emit any pollutants that aren't already being emitted by another emission source at the facility. Therefore, no information about the toxicity of the hazardous air pollutants (HAPs) is presented in this evaluation.

AIR QUALITY IMPACT ANALYSIS

An air dispersion modeling study or analysis was not required, because the proposed modification does not meet the definition of a major modification of a major source as defined in 45CSR14.

MONITORING OF OPERATIONS

Rules 2 and 10 only require recording of the amount of natural gas consumed each month for Boiler No. 20. However, these new units are subject to Subpart Db and the recordkeeping requirements in §60.49b(d)(1) requires daily fuel records. As noted earlier, the unit is subject to the Boiler MACT which requires tune-up once every five year for boiler using an oxygen trim system. The permit will require maintaining and operating such system with tune-up being conducted every 5 years to optimize CO emissions. Bayer will be required to install and operate NO_x CEMS to demonstrate continuous compliance with the NO_x emission limit for Boiler 20.

CHANGES TO PERMIT R13-3111C

Changes to the permit mainly are limited to inserting specific limits for Boiler No. 20, which are in Condition 4.1.1 and through-out Sections 4.1 through 4.5. where the condition applies to all of the boilers covered by the permit.

RECOMMENDATION TO DIRECTOR

The information provided in the permit application indicates the proposed modification will meet all the requirements of the applicable rules and regulations when operated in accordance with the permit application. Therefore, the writer recommends granting Bayer CropScience an modification permit in accordance with 45 CSR 13 for the Institute Site which is located in Institute, WV.

Edward S. Andrews, P.E.
Engineer

January 10, 2017
Date

Andrews, Edward S

From:	Andrews, Edward S
Sent:	Tuesday, December 27, 2016 2:39 PM
To:	Connie Stewart
Cc:	Vince McCormick (vince.mccormick@bayer.com); 'linda.tennant@bayer.com'
Subject:	WV DAQ NSR Permit Application Complete for Bayer CropScience LP - Institute Site
Attachments:	039-00007_PERM_13-3111D_draft.docx

RE: Application Status: Complete
Bayer CropScience LP – Institute Site
Permit Application R13-3111D
Plant ID No. 039-00007

Ms. Stewart:

Your application for a modification permit for the additional industrial boiler was received by this Division on December 12, 2016, and assigned to the writer for review. Upon review of said application, it has been determined that the application is complete and, therefore, the statutory review period commenced on December 13, 2016.

This determination of completeness shall not relieve the permit applicant of the requirement to subsequently submit, in a timely manner, any additional or corrected information deemed necessary for a final permit determination.

Attached to this email is a pre-draft of the modification permit. Should you have any questions/comments/suggestions, please contact me.

Should you have any questions, please contact me at (304) 926-0499 ext. 1214 or reply to this email.

Sincerely,

Edward S. Andrews, P.E.
Engineer
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street, SE
Charleston, WV 25304
304.926.0499 ext. 1214

Andrews, Edward S

From: Connie Stewart <connie.stewart@bayer.com>
Sent: Tuesday, December 13, 2016 1:49 PM
To: Adkins, Sandra K; Linda Tennant
Cc: McKeone, Beverly D; Andrews, Edward S; Vince McCormick
Subject: RE: WV DAQ Permit Application Status for Bayer CropScience LP; Institute

Dear Ms. Adkins,

Thank you for the notification on the status of our permit application.

Merry Christmas and Happy New Year

Best regards,

Connie Stewart
Head of Institute Site

Bayer: Science For A Better Life

Crop Science Division
Bayer CropScience LP
BAY CS-PS-GAIO Institute Site
Building 2, Room 227
25112, Institute, WV, USA
Tel: +1 304 767 6123
Fax: +1 919 549 3994
Mobile: +1 304 741 3629
E-mail: connie.stewart@bayer.com
Web: http://www.bayer.com

From: Adkins, Sandra K [mailto:Sandra.K.Adkins@wv.gov]
Sent: Tuesday, December 13, 2016 12:33 PM
To: Connie Stewart; Linda Tennant
Cc: McKeone, Beverly D; Andrews, Edward S
Subject: WV DAQ Permit Application Status for Bayer CropScience LP; Institute

RE: Application Status
Bayer CropScience LP
Institute
Facility ID No. 039-00007
Application No. R13-3111D

Ms. Stewart,

Your application for a modification permit for the Institute Site was received by this Division on December 12, 2016, and was assigned to Ed Andrews.

Within 30 days, you should receive a letter from Ed stating the status of the permit application and, if complete, given an estimated time frame for the agency's final action on the permit.

Any determination of completeness shall not relieve the permit applicant of the requirement to subsequently submit, in a timely manner, any additional or corrected information deemed necessary for a final permit decision.

Should you have any questions, please contact the assigned engineer, Ed Andrews, at 304-926-0499, extension 1214.

Andrews, Edward S

From: Ward, Beth A
Sent: Tuesday, December 13, 2016 4:03 PM
To: Andrews, Edward S
Subject: BAYER CROP SCIENCE LP PERMIT APPLICATION FEE

This is the receipt for payment received from:

BAYER CROP SCIENCE LP, INSTITUTE, CHECK NUMBER 3200283200, CHECK DATE 12/02/2016, $2,000.00
R13-3111D ID# 039-00007

OASIS CR 1700064138

THANK YOU!

Beth Ward
WV DEPARTMENT OF ENVIRONMENTAL PROTECTION
BTO FISCAL
601 57TH STREET SE
CHARLESTON, WV 25304
(304) 926-0499 EXT 1846
beth.a.ward@wv.gov

Included with this email is a draft of Permit R13-3111C. Please review this draft and if necessary provide comments/suggestions/questions to the DAQ by December 18, 2016.

Should you have any questions, please contact Ed Andrews at (304) 926-0499 ext. 1214 or reply to this email.

Sincerely,

Edward S. Andrews, P.E.
Engineer
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street, SE
Charleston, WV 25304
304.926.0499 ext. 1214

Andrews, Edward S

From: Linda Tennant <linda.tennant@bayer.com>
Sent: Tuesday, December 13, 2016 5:36 PM
To: Andrews, Edward S
Cc: Connie Stewart; Vince McCormick
Subject: RE: WV DAQ NSR Permit Application Complete for Bayer 039-00007_PERM_13-3111C

Ed – I have no comments or changes to your draft permit.

Best regards,

Linda K. Tennant
Site Environmental Specialist

Bayer: Science For A Better Life

Crop Science Division
Bayer CropScience LP
BCS-PSNA-PLAN-QHSE, QHSE
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25112-1005, Institute, West Virginia, U.S.A
Tel: 304.767.6161
Fax: 304.767.6621
Mobile: 304.690.3154
Mobile: 304.541.5221
E-mail: linda.tennant@bayer.com
Web: http://www.bayer.com

From: Andrews, Edward S [mailto:Edward.S.Andrews@wv.gov]
Sent: Monday, December 05, 2016 8:32 AM
To: Linda Tennant
Cc: Connie Stewart
Subject: WV DAQ NSR Permit Application Complete for Bayer 039-00007_PERM_13-3111C

RE: Application Status: Complete
Bayer CropScience LP
Permit Application R13-3111C
Plant ID No. 039-00007

Entire Document
NON-CONFIDENTIAL

Ms. Stewart:

Your application for a Class II Administrative Update permit for an industrial boiler was received by this Division on November 15, 2016, and assigned to the writer for review. Upon review of said application, it has been determined that the application is complete and, therefore, the statutory review period commenced on December 5, 2016.

This determination of completeness shall not relieve the permit applicant of the requirement to subsequently submit, in a timely manner, any additional or corrected information deemed necessary for a final permit determination.

Adkins, Sandra K

From: Adkins, Sandra K
Sent: Tuesday, December 13, 2016 12:33 PM
To: 'connie.stewart@bayer.com'; 'Linda Tennant'
Cc: McKeone, Beverly D; Andrews, Edward S
Subject: WV DAQ Permit Application Status for Bayer CropScience LP; Institute

RE: Application Status
Bayer CropScience LP
Institute
Facility ID No. 039-00007
Application No. R13-3111D

Ms. Stewart,

Your application for a modification permit for the Institute Site was received by this Division on December 12, 2016, and was assigned to Ed Andrews.

Within 30 days, you should receive a letter from Ed stating the status of the permit application and, if complete, given an estimated time frame for the agency's final action on the permit.

Any determination of completeness shall not relieve the permit applicant of the requirement to subsequently submit, in a timely manner, any additional or corrected information deemed necessary for a final permit decision.

Should you have any questions, please contact the assigned engineer, Ed Andrews, at 304-926-0499, extension 1214.